California Franchise Tax Board (FTB)

Enterprise Architecture Definition
Business Process Management (BPM)

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1.0 Executive Summary and Charter

1.1 Overview

Business Process Management (BPM) is a discipline at the intersection of management and information technology. BPM encompasses methods, techniques and tools to design, enact, and control business processes involving humans, organizations, applications, documents and other sources of information. BPM leverages tools (software) and solutions (integration) that depict, analyze and optimize business processes and workload management. Business rules and processes are registered centrally and delivered to the enterprise effectively and efficiently.

FTB has identified significant opportunities that are achievable by automating and integrating business processes internally as well as with external parties (e.g., data providers). Currently, FTB creates, operates and manages processes within individual Systems of Work (SOW) tied to the organizational structure rather than operational function. This has resulted in process redundancy and outcome discrepancy (i.e. multiple notices, different tax amounts, etc). Additionally, workflow steps between systems are manual and a source of costly rework.

FTB business processes and workflow are implementations of business rules that reflect FTB's policies, procedures and legislation. Today, workflow is implemented in applications that range widely in terms of processing capabilities, technologies used, communication protocols, security methodologies, and programming languages.

FTB's customers are individuals and business entities. FTB performs business functionality for their customers on all transactions submitted. Once the transactions are identified with an entity, the transaction is associated and processed as an entity centric event. BPM solutions better service the transactions, cases and associated entity information by creating clear metrics, tracking, and reporting.

FTB will deploy BPM solutions to achieve effective and efficient, enterprise-wide workflow, business rules management, and case management. The mature BPM architecture leverages the following architecture components to accomplish the desired effectiveness and efficiency:
- Business intelligence continually discovers additional reengineering opportunities.
- IAM determines human access to the information, cases, and associated workflows.
- ECM incorporates images (in/outbound) into the automated workflow processes.
- DDM provides the most appropriate information for the automated workflows steps.
- SOA services provide functionality for processing work at any and all workflow steps.

1.2 Scope

The BPM architecture definition defines the current and target states of FTB's Business Process Management architecture, a gap analysis and a strategy for implementation. The following list contains the subject areas covered:

- Governance to support BPM
- Business Process
- BPM as a discipline
- BPM-enabling technologies

1.3   General Requirements

The following table outlines the high-level requirements of the BPM Architectural Definition.

Figure 1.3-1: BPM Architectural Definition - Integrated Requirements

General System Requirements
Application Independence: • Workflows must be independent of specific services (or applications) to allow for a flexible implementation and maintenance process. • Business rules must be extracted from the existing applications and managed centrally. • Workflow related functionality must be provided as common infrastructure services • Workflows leverage common enterprise services.
Application Accessibility: BPM Solution must integrate well with existing and future services (SOA). BPM Solution must be capable of replacing existing case management functionality. BPM Solution must be capable of expanding to all FTB processes Validations and modeling will be pushed closer to the data capture process, which may require integration of different applications in cross-SOW business processes. These applications will need access to workflow processes.
Tracking: BPM Solution must enable appropriate tracking and measurement of workflow effectiveness and efficiency. Existing processes may need modifications to enable appropriate tracking of workflow execution. New processes should be built to provide tracking data.
ECM Integration: BPM Solution must be able to facilitate ECM workflow and incorporate existing ECM workflows Case management applications should interface with ECM solutions and workflows must be able to integrate the case management process with ECM workflows. Document oriented processes may be provided by an ECM solution. A distinction may be made between internal business collaboration and customer-focused business process execution allowing for the use of different products.
Business Intelligence: BPM Solution must facilitate acquisition of tracking metrics available to BI and Governance groups. Tracking of workflow execution should cross SOW boundaries so that full lifecycle analysis can be performed by BI and modeling services.
Integration with Enterprise Modeling: BPM Solution must provide a centralized rules engine (for storage of key models and model criteria) BPM Solution must conduct Enterprise Modeling processes BPM Solution must facilitate modeling for the purpose of rules discovery. Modeling stratifies cases to provide for the most appropriate treatment strategy. This process must integrate well with the applications that will be used to manage cases and implement the strategies. Modeling is dynamic and event driven and workflows accommodate events that interrupt the flow of execution.
Visual Tools: BPM Solution must present, modify, and demonstrate business process improvement without modifying existing workflows. BPM must provide visual tools for the creation, modification and modeling of workflow processes. BPM Solution must use FTB approved standards for rules and workflow language (BPEL) Visual tools for creation of workflow processes should be common and available for use across all SOWs. Workflows should incorporate human, application, and document oriented processes. These tools should create standards-based output and be useful to both developers and business analysts.

General System Requirements
Manage Enterprise Workflow: BPM Solution must have site licensing model. BPM Solution must serve as enterprise management for incorporated workflows. BPM Solution must allow for resource leveling, process tuning, and overall efficiency management. The System must be designed around and have the capability to manage workflow and work queues associated with different staff roles, and also be able to manage multiple work queues.
Enterprise Level Routing: BPM Solution must route exceptions according to predefined process for manual intervention. BPM Solution must allow manual interventions to be re inserted into workflow after exception is resolved. The System must route exceptions to different work queues. The System must allow authorized state staff to route work to another work queue (based on preset and configurable routing conditions).
Monitoring: BPM Solutions must monitor workflows for management reporting purposes. BPM solutions must automate workload balancing where rules are known and defined in the system.
Flexible Allocation and Assignment: BPM Administrators must allocate, reroute or process workloads in any and all managed processes BPM Administrator must assign or reassign workloads to various resources.

1.4   Conceptual Architecture

The following diagram shows the ETA with the services relevant to case management and workflow at an enterprise level. Sows are represented in the drawing along with relationships and interactions between the components illustrated using green arrows. Although not shown here, Taxpayer Folder services are also a component of the enterprise case concept.

Figure 1.4-1: BPM Architectural Definition – "To Be" Technical Architecture Model
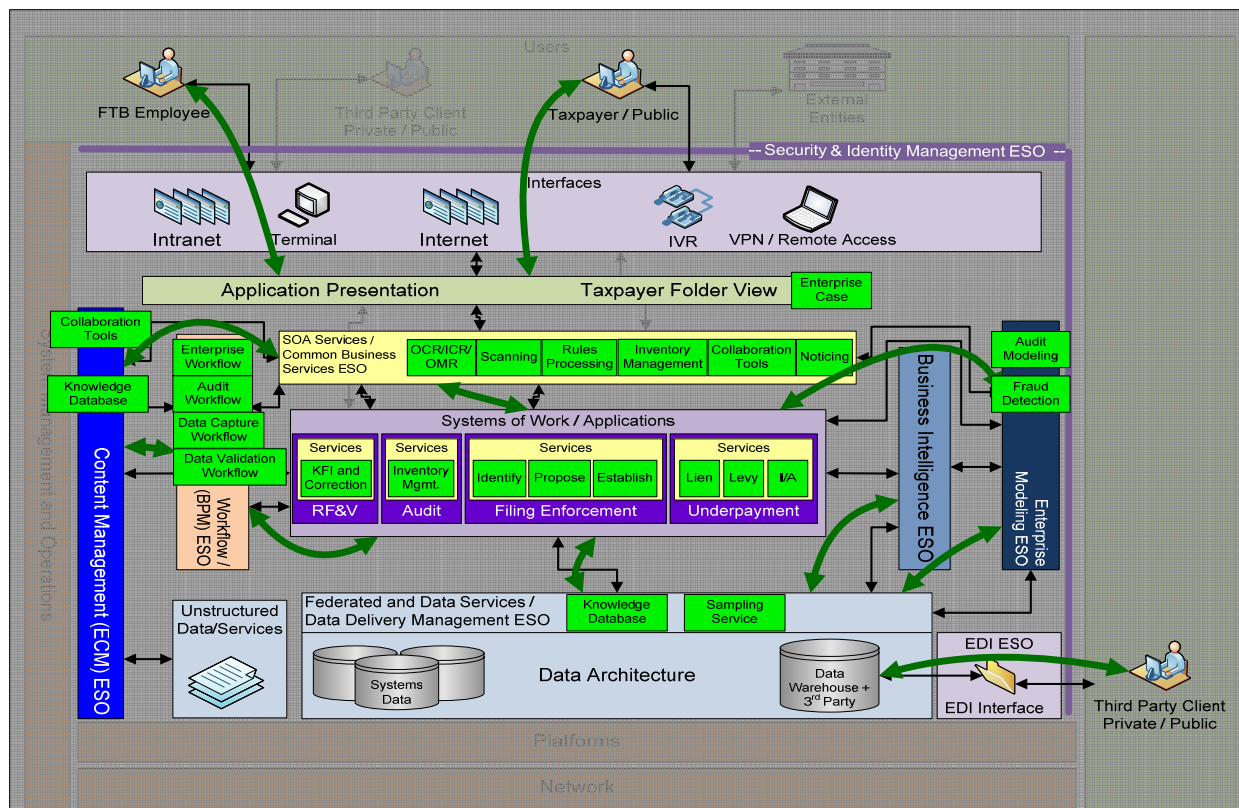
The Following are descriptions of the workflow management functionality related to other Architectural Definition.

1.4.1   SOA Services / Common Business Services

Each business unit has processes that require workflow management and measurement. These processes are implemented by a series of services (see SOA Architecture Definition document) that are integrated and measured. For example, audit and collection activities require modeling, case prioritization, cases management services that are associated as steps in workflow. Therefore, service oriented architecture principles; standards and services are vital to the operation of a mature BPM solution.

1.4.2   Business Process Management

The BPM solution must use industry-accepted standards (as they are developed) such as BPMR (Business Process Modeling Notation) and BPEL (Business Process Execution Language.) Workflow and business rules engines must integrate with business services to execute business activities.

1.4.3   Enterprise Content Management (ECM)

ECM systems have workflow capabilities. These workflows must be standardized and aligned with the BPM solution (see ECM Architecture Definition document).

Many common and SOW-specific services are transformed and integrate with workflows ranging from the common processes used primarily by Returns Filing & Validation such as; OCR/ICR, scanning, and the rules processing, to collaboration and noticing services.

1.4.4   Enterprise Modeling

Enterprise modeling services are discovered, implemented and managed through the BPM solution. Workflows associated with enterprise modeling are event driven and provide dynamic model execution and stratification. Common modeling notations and service-oriented tools maximize the integration of workflow systems that are provided by vendors of products.

1.4.5   Federated and Data Services / Data Delivery

Business rules, workflow definitions and BI/metrics are stored data stores. Persistence is provided through data services.

FTB's target architecture reflects industry best practices. Our target BPM architecture is a mature and effective BPM, combined with service-oriented architecture to optimize results. SOA promotes standardization, consolidation, and elimination of redundant functionality. Optimized service delivery improves BPM quality, effectiveness and efficiency. By implementing a standards-based BPM solution and workflow environment, FTB combines services (SOA) to refine existing business processes and creates efficient new ones.

2.0 Current Architecture

FTB has implemented workflow in several different application areas; however, all implementations are specific to a single application. Current workflow processes are not available for reuse. The following lists some of the areas that use workflow:

- **INC**: Case Management Template (CMT) has a manual workflow within CMT and between CMT and INC. It is built as part of the system.
- **ARCS**: Through the use of rules and states, ARCS moves cases from state to state and adds them to work lists for collectors.
- **IPACS**: Uses workflow to route batches through the applications that make up IPACS. The workflow is automatic and a key part of the system, but can be monitored and changed by managers. Built as part of system.
- **PASS**: Uses workflow functions to automatically route cases through the system. Built as part of the system.

FTB owns two popular tools used for Business Process Analysis. Like most other tools in the BPM/BPMS arena, these tools perform other main functions and are used for business process analysis. Below are examples of tools FTB uses that cross over into BPM:

Microsoft Visio: Can be used to visually document business processes. Microsoft Visio has pre-built templates to be used for process modeling, but has limited functionality.

Sybase PowerDesigner: Includes object-oriented analysis and design capabilities, but mostly focused on data models.

3.0 Target Capabilities and Components

3.1 BPM Technical Architecture

This architectural definition focuses on the Business Process Management System (BPMS) technologies and how they fit within FTB. BPMS is the technology implemented to support business in the identification, management, control, modeling, monitoring and improvement of their business processes. This technology puts the control of processes back in the hands of business but does not completely eliminate IT from BPM.

BPM requires tools that business managers use to control and modify processes. This requires technologies that make process clearly expressed and readily changeable. We call these BPM-enabling technologies. FTB's BPM technology will provide graphical models that enable managers to control various aspects of business operations and invoke the relevant resources.

3.1.1 Process Modeling and Business Process Analysis

Process models are events that trigger action and the sequences of steps and the business rules used in and between those steps to support decision-making and execution flow. Process models are needed to help business and IT managers understand actual processes and enable them (by visualization and simulation) to propose improvements.

The business process modeling tools (business process analysis (BPA) tools) will provide a shared environment for the capture, design and simulation of business processes by business analysts, managers, architects and other staff. These BPA tools are modeling-only environments, not execution environments. These BPA tools will support the BPMN and BPEL standards, so it can work and communicate with other BPM technologies that will be acquired. These BPA tools will be the initial step in supporting the BPI/BPM initiatives and enterprise architecture and will be used to create "as-is" and "to-be" process models.

FTB will have explicit process modeling capabilities that are easily changeable by non-technical managers. These models provide a basis for cross-organizational collaboration between managers responsible for the separate parts of a process, and with IT professionals on the implementation of the resulting design. To support simulation, models will embrace characteristics such as skills, availability and costs of the people, and other resources that perform the process.

The toolset will provide a framework to follow when modeling processes and a fully functional dashboard allow business staff to have visibility into the processes and their interactions. This allows business users to graphically view the processes and their interactions. It will give visibility to the Business Activity Monitoring data, which provides event-driven, real-time access to process performance. This provides users with historical and real-time access to process execution, provides alerts and allows users to act on problems in real-time. This BPA tool will primarily be use by BP architects, who are responsible for redesigning business processes at a conceptual level, and BP analysts, who redesign processes at a more detailed level and are responsible for coordinating the implementation of the new processes as part of BPM projects, IT development projects or package purchase acquisitions. The BPA tool will be used by other roles in the organization as well. For example, business users and data, enterprise and technical architects looking to understand business processes in the context of their disciplines.

BPA tools are key components of BPI and BPM initiatives. BPA tools complement BPMS tools by enabling deeper, multilevel modeling than the modeling component of a BPMS.

3.1.2   Process Execution

Making a model executable requires other BPM-enabling software such as integration technology, a runtime environment and rule engines. Many of the enabling technologies continue to be available separately. When provided together, we call the system a BPMS. To support the entire process life cycle, from modeling through execution to monitoring, the process model will become the core of the business process. The BPMS allows the users to design the process models, and execute the models in a simulation environment. This environment will use both historical and real-time data to perform the model simulation to test how the design works with other processes and with any constraints placed on the processes. The BPMS tools are used to design and build the process models, and store the models in a single process repository.

Business managers will use the BPMS's graphical process model to see and directly monitor and manage all interactions between human, system and information resources and adjust behavior and execution flow in response to changing dynamics and improve business performance. The BPMS addresses the desire of business managers at FTB to see and gain hands-on control of their operational processes to better manage work outcomes. As a software infrastructure platform, BPMS enables business and IT professionals to work together collaboratively on all process design, development, execution and enhancement activities.

The BPMS will support the following:

- Support modeling and analysis of business processes, including all aspects of workflow to be managed (that is, tasks, roles, decisions, approvals, reviews, escalations, collaborations, flows, rules, policies, forms and other business information objects, events, goals, objectives, and scenarios) to identify the best possible design.
- Support round-trip engineering between the model and its physical implementation, so that changes made to the model are easily reflected in the execution and so that changes to the resources are easily fed back into the model.
- Coordinate multiple interaction patterns between users participating in the process, systems required to complete the end-to-end process and information content, some of which may be remote to the BPMS. Interaction patterns include human-to-human, system-to-system, human-to-system, human-to-information content and content interdependencies.
- Provide participants with access to various forms of business content (both structured and unstructured information) for manipulation and management within the process context.
- Support user manipulation and management of business rules.
- Support user and group collaboration in the process context (in real time and offline).
- Support monitoring, reporting, analysis and notification of work activities and business events, using both data about completed work transactions and in-flight business transaction data (in real time and offline, potentially for predictive analysis).
- Support process simulation and optimization using real-time, historical and estimated data values.
- Provide for management of all process components (see the above list) through their life cycle (that is, access control, versioning, descriptive metadata and so on).

The BPMS will contain these core BPM-enabling tools

- <u>Orchestration</u> engine, which coordinates the sequencing of the activities and steps (system and manual) according to the flows and rules in the process model.
- <u>Business intelligence and analysis</u> tool which support analysis of data produced during process execution. Capabilities range from reporting to online analytical processing analysis to graphical user dashboards. Business activity monitoring (BAM) systems do this in real time with proactive alerting.
- <u>Rule engines</u> will execute rules that abstract business policies and decision tables from the underlying applications, and make available more-flexible process changes.
- <u>Enterprise Rules Repository</u> will contain process definitions, process models and business rule data to enable reuse across business functions.
- <u>Simulation and optimization</u> tools enable business managers to compare new process designs with current operational performance. Scenarios are executed, altering resource constraints and business goals, to assess risk and display the financial and operational impact on FTB.
- <u>Integration</u> tools link the model to other system assets (data and logic) that support work steps.

3.2   Target Enterprise Governance

BPM is an IT-enabled management discipline. Its goal is agility through making processes visible (explicit processes). BPM is a discipline and a technology. BPM as a discipline is the most critical element of BPM. It is not a technology; rather it's the steps FTB needs to go through to be able to be successful. The BPM discipline is enabled by BPM technologies.

Business Process Management (BPM) requires three areas for successful implementation: Business Process Improvement (BPI), BPM as a discipline, and BPM-enabling technologies.

Implementing a BPM and its governance will have a significant impact on how FTB's Systems of Work (SOW) staff, both business and IT, is organized. FTB will centrally control and manage FTB's business processes by a centralization of control over all of FTB's main processes.

FTB will follow best practice recommendations, which puts ownership of BPM in control of business staff. This is a significant change, since IT tends to control and manage processes.

FTB will clearly define areas of responsibility and control between business staff and IT staff. This is important in process-centric structures, which are very different than FTB's current function-centric siloed structure. The governance and organization must be prepared for change and use the Governance Council and Enterprise Architecture Council's BMP Centers of Excellence to address expected resistance. FTB will have two councils to manage processes.

3.2.1   Internal Business Action Committee Meeting

FTB will follow the best practice of each major business process will have an executive sponsor. This group meets monthly and focuses on implementing process improvement initiatives and resolving cross-discipline issues. This group will set priorities regarding process improvement initiatives and review all policies associated with the business processes across functional

areas. This group will have a more balanced representation of the SOW areas and less IT representation then the current IBAC committee.

Process Owners Council

FTB will follow the best practice of having a group who manages the changes to processes across FTB. This level of governance consists of global process owners who meet monthly to implement inter-process changes.

3.2.2   BPM Center of Excellence

The BPM Center of Excellence offers a "one-stop shop" providing services to multiple business process management (BPM) initiatives that enable the enterprise to progress with BPM efforts overall. It is the responsibility of the BPM Center of Excellence to ensure:

❖ Business user should be able to:
  ➢ Know what business processes the enterprise manages
  ➢ Know what the business processes are for
    ▪ Including modeling
  ➢ Know where the business processes are stored
    ▪ At a minimum the Authoritative Source
  ➢ Know who is allowed to access the data (security)
    ▪ If they are allowed to know this
  ➢ Know how to get the business processes
  ➢ Know what can be done with the business processes (privacy, compliance)
  ➢ Know what decisions have been made about the business processes
  ➢ Know who has made decisions about the business processes
    ▪ Governance
    ▪ Stewardship
  ➢ Know who manages the business process
    ▪ Stakeholder community
  ➢ Know who to contact for the business process
    ▪ Know what processes exist to resolve issues

❖ The enterprise as a whole will benefit as the business user also:
  ➢ Uses the BPM to increase the efficiency of the enterprise's operations Including re-engineering of business processes to take advantage of improved data understandability, availability, and quality
  ➢ Uses the BPM to meet the enterprise's business goals Including adaptation to changing market, regulatory, and other environments. And also agility in responding to new opportunities
  ➢ Uses the BPM to mitigate risk in the enterprise including reduction of operational risk inherent in the process itself as process quality improves

4.0 Gaps Analysis

4.1   Business Role

A key component of a BPI/BPM initiative is the redefinition of the role of the business as a partner in BPM. Business will not only participate in defining the processes, but also in defining the goals of the BPM effort, selection the BPM tools, and user of the tools. This will be a significant shift where IT staff takes the lead. This sharing will require requires organizational and cultural changes.

4.2   Silo Centric Processes

BPM governance process manages and aligns IT projects and systems but does not align them to the enterprise architecture. FTB, like many organizations, has developed silo based systems, where focus is solely on the business process it performs. This has created an IT support infrastructure that has staff assigned to and focused on a specific process within one SOW. This type of structure is not conducive to collaboration between systems, and sharing of data and knowledge.

FTB has discovered each SOW built processes that perform similar processing. BPM will be the discipline, within FTB, that supports an organization's effort to model and manage the processes within a SOW and between SOWs.

To solve these gaps, FTB's BPM will:
- Document existing processes (both system and human) to make them visible
- Place business process knowledge in a enterprise repository using common notation
- Coordinate processes through workflow within SOWs and between SOWs
- Model process changes before they are made, to ensure they are the best approach and compensate for loss of knowledge
- Monitor current processes and identify and correct those that are broken
- Orchestrate the constant and continuous changes going on within the department at any given time

4.3   Hidden Processes

Process tends to be imbedded (hidden) in the applications or known by a few staff. With many senior staff retiring in the coming years and the workforce being mobile, this process knowledge is impossible to replace.

Today's accelerating business cycles are driving the need for managers to manage business transactions in real time. Managing work activities by using after-the-fact reports are not good enough. Pressures on FTB for information transparency, operational accountability and compliance now make it critical for managers to stay on top of daily transactions. However, business processes are largely hidden in applications and in employees' heads. A process that is automated in applications is at best implied to the user. Programmers control the process flow via various techniques, such as screen flow (user navigation), internal flow control logic and even data values.

A BPMS will make processes explicit, which are visible, via graphical models and will be independent of physical resources used in execution. Forms of explicit process management tools have been used as design aids, as end-user training tools and as part of operations manuals but a BPMS will take explicit process management to a higher level of value by making

the model executable. The graphical model is metadata that is loosely coupled to its physical runtime resources. At runtime, the model is interpreted and bound to the referenced physical resources. This approach keeps the model synchronized with the actual executing process.

4.4   BPM Tools

FTB has limited BPM technologies and is not using them to support BPM. FTB will procure a BPMS solution that follows its BPM architecture definition.

4.5   Streamlining interoperable Processes

Understanding our complex business processes interactions is a significant challenge. The assistance of a tool with visualization, simulation and activity-based costing (ABC) will optimize business processes. BPA tools will define the business architecture portion of the enterprise architecture. It will be possible to do change impact analysis across organizations and roles based on the inter-relationships of their models.

BPA tools enable BP architects to document, analyze and streamline complex processes, thereby allowing business areas to become more agile and effective. BP analysts, in turn, redesign BP models and refine them to a more detailed level to ensure the processes are properly communicated to those implementing them through development, package purchase or applications hosted by partners or third parties.

5.0 Roadmap

Task
FTB BPM Enterprise Assessment
   Organizational Assessment of BPM Maturity Level (Gartner)
   Assess Corporate Culture (Gartner)
Create BPM Center of Excellence (EAC)
Pre-Project Tasks
   Determine the Roles and Skills Needed
   Select Executive Sponsor
   Determine Lacking Skills and Train Staff
   Select Appropriate Project
   Determine Existing BPM Artifacts (BPS, Workflow, BRE)
   Determine the Level of Participation between Business and IT
Project BPM Tool Tasks
   Define BPM Roles and Skills Needed for Project
   Define Organizational Structure for BPM Effort
   Define Scope of BPM Effort
   Create Governance
   Determine Standards to Follow
   Select Methodology, if appropriate
   Select Framework, if appropriate
   Determine whether "As-Is" and "To-Be" Processes need to be documented
   Determine the Prime of User of the Tool (Single tool or multiple tools)
   Determine the Tool's Usage Environment (existing tools or platforms is must match)
   Determine Whether Tool Performs Single Function or Multiple Functions
   Determine Whether Tool must Integrate with Other BPM Tools (BPA, Workflow, BRE, BPMS, etc)
   Determine Whether Tool must Integrate with Other ESO Tools/System (SOA, BI, ECM, etc)
   Develop a plan and objectives for the use of BPM Tool
   Based upon the Criteria Above, Evaluate BPM Tools Required
   Download Evaluation Copy of Each Tool
   Select Tool(s) Matching the Criteria
   Purchase Tool(s)
   Install Tool(s)
   Train Users of Tool(s)
   Determine BPM Tool Interaction in Project
      Will BPA be used to Create Workflow Processes
      Will Workflow Use Rules Repository (BRE) to Control Flow
   Determine the BPM Tool(s) Interaction with other FTB Tools/Systems
   Begin Using Tool(s)
Part 1: PIT RF Business Rules
   Define Process to Discover, Validate and Record

Discover business rules from Business Staff
Discover business rules from IT Staff
Record rules in BRE
Validate business rules with Legal
Reconcile rules among groups
Document rule collection process and results

Part 2: Reengineer PIT RF & RV
Define Objectives for BPR
Record RF "As-Is" Processes in BPA
Record RV "As-Is" Processes in BPA
Document BPA Process & Results

Part 3: BE Filing & Fraud Rules
Define Process to Discover, Validate and Record
Discover business rules from Business Staff
Discover business rules from IT Staff
Record rules in BRE
Validate business rules with Legal
Reconcile rules among groups
Document rule collection process and results

Part 4: RE BE Filing
Define Objectives for BPR
Record RF "As-Is" Processes in BPA
Record RV "As-Is" Processes in BPA
Document BPA Process & Results

Part 5: Enhance Collection Modeling Process & Rules
Discover PIT ARCS rules
Discover BE ARCS rules
Discover COD rules
Discover VRC rules
Reconcile rules among groups
Record PIT ARCS "As-Is" Processes in BPA
Record BE ARCS "As-Is" Processes in BPA
Record COD "As-Is" Processes in BPA
Record VRC "As-Is" Processes in BPA
Document BPA Process & Results

Part 6: Workflow Management Governance & Transition
Vendor develops Governance
Vendor documents Governance
Workflow Governance Transitioned to State

Part 7: Design Collection Workflow Rules
Design Collection "To-Be" Workflow Process
Develop Workflow using Workflow Tool
Integrate Workflow with BRE
Test Workflow

Part 8: Develop & Implement BE Workflow
Design BE "To-Be" Workflow Process
Develop Workflow using Workflow Tool

Integrate Workflow with BRE
Test Workflow
Part 9: Decouple/Replicate PIT RF & RV Rules
Integrate PIT RF & RV with BRE
Test Integration
Part 10: Modify RF PIT Workflow
Design PIT RF "To-Be" Workflow Process
Develop Workflow using Workflow Tool
Integrate Workflow with BRE
Test Workflow
Part 11: Develop & Implement Integrated RF/RV PIT Workflow
Design PIT RF/RV "To-Be" Workflow Process
Develop Workflow using Workflow Tool
Integrate Workflow with BRE
Test Workflow

Training, Policy, Procedure Activities -- for Business Consideration
Implement Workflow in Collection System
Implement Workflow in BE System
Implement BRE in PIT System
Implement Workflow in PIT System
Implement Workflow in PIT System

5.1   Dependencies

Our full Business Process Management Suite (BPMS) will be dependent upon these
architectures and technologies; Service Oriented Architecture (SOA), Security and Business
Intelligence (BI).

- SOA: There's a two-way relationship with SOA. BPMS tools will be used to design
  the system-to-system process flows. BPMS also relies on SOAs for monitor and
  changes processes.
- Security: Used to define and control the workflow.
- BI: Provide information about process and workflow results.
- Data Management: Store models, flows, rules, etc.
- ECM: For unstructured data, BPMS could supply the workflow.

The implementation of the Security architectural definition will ensure that workflow rules can be
enforced as processes move between systems and staff. With the implementation of SOA,
business users will be able to use Business Application Modeling to record the activities within a
database and analyze how things are working. Users can now execute their process changes
within the systems in real-time through the use of SOA. This gives user control of system in the
end-to-end processing.

6.0 Appendix

6.1.1   Best Practices

BPM is a highly productive management discipline that provides for governance in a business process environment toward the goal of improving agility and operational performance. BPM is a structured approach that employs methods, policies, metrics, management practices and software tools to manage and continuously optimize an organization's activities and processes.

Following a BPM methodology is critical. Organizations are in transition and long-standing business practices may be in flux. BPM further drives and guides change. The management discipline of BPM itself is not static; it too must respond to change. Strict governance and procedures must be in place for business rule management and approval of process change. Organizations must understand how better process management enables agile response to change. The focus on improved process management forces the organization to adopt a greater focus on process discipline. The only motivation for senior leadership to embrace such a disruption to the status quo must lie in the promise of a significant benefit to the organization.

Increased business agility is one of the many outcomes realized from adopting BPM. The gains realized through new BPM management practices and enabling technologies propel agility throughout the organization. BPM requires business managers to learn real-time management skills to achieve greater business agility. Those skill sets include collaboration and consensus building. Shared control between business managers and IT professionals shortens the cycle time to make process improvements. IT developments staff must leave behind the long-held belief that they alone must perform all the front-end analysis and process design. IT managers must proactively encourage a progressive shift to shared responsibility for these activities with business process analysts, business managers and process owners.

BPM as a set of principles:
- View business processes as valued assets.
- Realize that business processes have a constant revision cycle.
- Demand an engineering approach to process management.
- Believe that process management delivers more than improved operational performance.

Failures of sound management disciplines are often due to the lack of technology to support the underlying practices. One of the most-valuable aspects of BPM technology is the ability to directly support process management practices in a more-fluid manner across the entire life cycle.

One of the greatest challenges faced in a business process improvement (BPI) effort is overcoming the sometime conflicting values that different groups embrace. Businesses have adopted many tactics to cope with competing interests: changing incentive structures, management reporting, and matrix management and even imposing disincentives. The most important *best practice* here is the participation of executive leadership. Each major business process has an executive sponsor who sits with peers on the process executive council.

Two key issues in a BPI effort are governance and organization: Who has the final responsibility for business processes and to who should the process experts report? Regardless of who leads BPI efforts, both sides need to retain and grow core competencies and manage shared competencies.

IT Core Competencies:
- Setting standards for technical and best-practice procedures
- Integration of process steps with physical orchestration
- Resolving scalability issues supporting scope and complexity
- Process-level and system-level security
- Tool testing and integration

Business Core Competencies:
- Strategy and business case development
- Defining business performance metrics
- Simulation, optimization and scenario creation
- Process monitoring and analysis
- Business change management and communication
- Policy management

Shared Competencies:
- Process deployment
- Process execution and performance
- Tool evaluation
- Business and process rules analysis and management
- Operational procedures, including version-level control
- Creation of process, rules and events repository
- Detailed process design
- Training and education
- Event analysis and management

Overcoming barriers to BPI:
- Appoint the most collaboration-oriented senior executives as owners of the major business processes.
- Practice systematic stakeholder management and change management around the whole BPI program, as well as for individual initiatives.
- Build and periodically refresh the BPI business case by emphasizing the likely business benefits.

Determining the correct BPMS for process improvements:
- Model and simulate all interaction patterns between workers, systems and information to create shared understanding about how to optimize business results.
- Consistently execute the optimal process.
- Coordinate and manage the handoff of work across boundaries.
- Provide real-time feedback to line managers about work-in-progress to support in-line process adjustments.
- Monitor process outcomes to performance targets, and continuously refine and adjust process flows and rules.
- Collaborate with IT professionals throughout the process life cycle.

An organization needs special skills to use the BPM-enabling tools with the BPM discipline. Traditional business analyst and IT skills are not enough. New skills and approaches are required to properly acquire, manage and optimize the business processes. Also, business should be using the BPM tools, not just IT. IT supports and uses the tools, but the tools are meant to be a toolset that business uses to drive IT.

   Gartner Docs:
Gartner's Position on Business Process Management, 2006

6.1.2   Trends and Standards

BPM and EA are two rapidly growing disciplines making significant contributions to better the performance of the organization – typically involving IT. They are about planning, but have different perspectives on time. Both practices capture what is happening in their field of view and what they plan to implement in the future. Both use modeling, but with differing levels of detail or granularity. The key is to employ the same or compatible modeling methodologies for their two purposes to make each one stronger and to enable each discipline to be implemented more effectively with less effort.

BPM is not a label for new technology or a simple process upgrade; it is significantly broader in scope and has several relevant values:
- Business processes are essential organizational assets, including the people that perform them.
- BPM is not a one-time event, but a persistent management approach to gaining continuing performance advances.
- BPM is not just a technical solution; it depends on the related culture (that is, gaining user understanding, encouraging ownership and observing metrics) and anticipation of new business and technological capabilities.
- Employing BPM technology can provide critical insights and enable sound engineering and simulation to gain the optimal performance in a complex multi-hierarchy environment.
- BPM incorporates the goal of achieving change rapidly and frequently to meet dynamic forces and simultaneously stimulate innovation in process evolution.

Common myths of BPM:
- *BPM is just a process improvement project* – BPM is not a project. Process improvement is a continuous outcome from the ongoing management of the business process.
- *BPM is a technology* – BPM is a management practice, and certain technologies help to enable that practice.
- *A business process is a software application* – Many business processes are driven by people and are labor intensive, with no technology supporting the process.
- *BPM is all about process standardization* – Better process management leads you to adopt best process practices; however, BPM also delivers agility, innovation and specialization.
- *BPM is a radical change to business* – Although process changes occur, beginning with the current-state process and incrementally change business over time.

BPM is a management discipline that requires organizations to shift to process-centric thinking, and to reduce their reliance on traditional territorial and functional structures. The development of BPM technologies is enabling business managers to abstract process flows and rules from

the underlying applications and infrastructure, and to change them directly. BPM is neither a technology nor an updated version of BPR. It is an IT-enabled management discipline. It represents a fundamental change in how businesses manage and run their operational processes.

Organizations can move to BPM in various ways. The "right" choice depends on the company's unique business challenges, the leaders' understanding of BPM and the commitment to organizational transformation. Success with BPM also requires a culture of real-time management and skill in using software tools to support rapid decision-making. To support the real-time management style, the organization must align its business analysts with process owners and may need a separate process center of excellence. It also needs to progressively refocus the work of the IT department.

6.1.3   Standards

BPM is a management discipline that treats business processes as assets to be valued, designed and exploited in their own right. It is a structured approach employing methods, policies, metrics, management practices and software tools to manage and continuously optimize an organization's activities and processes. It aims to improve agility and operational performance. It treats processes as organizational building blocks with as much (if not more) significance as functional areas and geographic territories. The BPM discipline has implications for four aspects of business:

- *Strategy:* The strategy of the organization must be explicitly linked to and, in turn, executed through its business processes. Processes provide a shorter link between strategy and operations by overcoming the vested interests of territorial and functional managers. Although operational changes within a functional unit are relatively easy to make, conflicts of interests between functions often inhibit any shared understanding of the need for broader process change to reach strategic objectives.
- *Governance:* There should be explicit responsibility for business processes and policies at the highest levels of the organization, and for sub-processes at the departmental level. Business objectives drive process performance objectives, which motivate staff and business partners. There must be clear accountability for the approval, implementation and audit of process and business rule changes.
- *Organization:* The organizational structure must recognize the interdependencies and relationships that foster value creation across the enterprise. It de-emphasizes hierarchical reporting relationships and empowers employees to seek improvements across organizational boundaries.
- *Culture:* The methods, procedures and skills that support all stages of the process life cycle must be conducive to rapid change. There is a culture of constant change to stay in step with fluctuating business conditions.

Each step of the process revision cycle creates value. Beyond the value of creating a business case for improvements to a process, the first step in the BPM discipline of managing a process is modeling the target process. Prior to starting any design or revision process, the organization should decide the scope of its initial activities, make the business case for BPM and adopt a proven methodology.

- *Discovery* identifies the intricacies of how a process executes.

- *Modeling* is valuable because it shows easy improvement opportunities, or at least the scale of the problem.
- *Simulation* reveals bottlenecks that are not obvious during static modeling.
- *Deployment* then creates detailed process execution scripts and makes the required changes in systems.
- *Execution* is where the main value of BPM is realized, because it's where the actual improvement in the process is first seen.
- *Monitor* collects information from the executing process in <u>real</u> time.
- *Analytics* creates further value when key performance indicators based on process execution are linked directly to business objectives.
- *Optimization* is a fact-based approach to process scenario optimization.
- *Refine* establishes the way the stakeholders want work to be accomplished.

The following table lists some of the current BPM related standards and the organization that is responsible for each.

Figure 6.1-1: BPM Standards

Standard	Organization	Type
Business Process Execution Language (BPEL)	OASIS	Execution Language
Business Process Modeling Notation (BPMN)	Business Process Management Initiative (BPMI)	Notation language
Business Process Modeling Language (BPML)	BPMI	Execution language
Business Process Query Language (BPQL)	BPMI	Administration and monitoring interface
Business Process Semantic Model (BPSM)	BPMI	Process metamodel, in fashion of Object Management Group (OMG) Model-Driven Architecture (MDA)
Business Process Extension Layer (BPXL)	BPMI	BPEL extension for transactions, human workflow, business rules
UML Activity Diagrams	OMG	Notation language
Workflow Reference Model	Workflow Management Coalition (WfMC)	Architecture
XML Process Definition Language (XPDL)	WfMC	Execution language
Workflow API (WAPI)	WfMC	Administration and monitoring, human interaction, system interaction
Workflow XML (WfXML)	WfMC	Choreography (or similar to it)
Business Process Definition Metamodel (BPDM)	OMG	Execution language and/or notation language, as MDA metamodel
Business Process Runtime Interface (BPRI)	OMG	Administration and monitoring, human interaction, system interaction, as MDA metamodel
Web Services	World Wide Web	Choreography

Choreography Interface (WSCI)	Consortium (W3C)	
Web Services Choreography Description Language (WS-CDL)	W3C	Choreography
Web Services Conversation Language (WSCL)	W3C	Choreography
XLANG	Microsoft	Execution language
Web Services Flow Language (WSFL)	IBM	Execution language
Business Process Schema Specification (BPSS)	OASIS	Choreography (and collaboration)

Table from What is Business Process Modeling by M Havey on ONJava.com.